Bachelor Program in Mathematics Faculty Mathematics and Natural Sciences HASANUDDIN UNIVERSITY



Module Description of Geometry

Module Name		Geometry	
Module Level		Bachelor	
Code, if applicable		23H01130103	
Subtitle, if applicable		231101130103	
Courses, if applicable		Geometry	
Semester(s) in which the	:	5 (Fifth Semester)	
module is taught		Duct De Austrika val Austri MCs	
Module coordinator(s)	:	Prof. Dr. Amir Kamal Amir, M.Sc.	
Lecturer(s)	:	Dra. Nur Erawati, M.Si.	
Language	:	Bahasa (Indonesian language)	
Relation to curriculum	:	Compulsory course in third year for Bachelor degree in Mathematics	
Type of teaching/teaching method	:	Lecturing, Small Group Discussion, Cooperative Learning, Self- Directed Learning	
Contact hours	:	150 minutes lectures per week, 180 minutes structured activities per week, and 180 minutes independent study per week	
Workload	:	Total workload is 135 hours per semester which consists of 4 hours per semester for Learning and Teaching, 47.5 hours per semester for Self-Study, and 47.5 hours per semester for Structured Works	
Credit points	:	3 (4.8 ECTS)	
Requirements according to the examination regulations	:	Students are required to attend at least 80% of the total meetings which is recorded via the attendance menu at https://sikola-v2.unhas.ac.id/, complete all mandatory assignments, and obtain permission from the lecturer to participate in the written examination.	
Recommended prerequisites	:	Students have completed and taken the exams for Real Analysis	
Module objectives/intended learning outcomes	:	After the completion of this module, the student will be able to: CLO 1. identify the properties of real numbers, generalize to higher dimensions, and establish relationships to solve problems; CLO 2. analyzing the differences between vectors, bivectors, and multivectors; CLO 3. analyzing the generalization of real numbers to quaternion numbers The following is the mapping of the ILO and the CLO of this course:	

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				ILO 2	ILO 3	ILO 4		
			CLO 1	Х	120 0			
			CLO 2		Х			
			CLO 3			X		
Study and examination requirements	:	with a fo extendin dimension from sime and press systemate bivectors translation application Study and Study Study Class Study	ry introduces the cus on developing the properties ons. Learning emple to complex pentations of the cic thinking. The constinct in Euclidean dexamination resents must attendents must attendents must switch ents must inform due to sickness, ents must subnuline.	of real phasize problem orem promaterias well and rote 15 mires off all of the lecte.	ents' cr numbe s probl is, and roofs to il cover ic oper as qua ationa nents: nutes b electro	itical thirers to high lem-solvi involves train log rs vector rations su ternion a I fields. efore the onic device f they wil	nking skills in her ng, ranging discussions gical and spaces, uch as algebra and its e class starts. es. I not attend the	
		deadline.						
		• Stude	ents must attend	the ex	am to {	get final g	grade.	
Exams and assessment formats	:	Report (60%), Written Exam (40%). Reports measure analytical and writing skills. The Written Exam assesses comprehension and synthesis of all materials discussed during the semester. Altogether, these components account for 100% of the final grade. Students are marked based on their percentage of points						
		obtained and based on the following grade scale:						
			Percentage of Achievement	(¬r	ade	Conver Valu		
			85 – 100		Α	4.00)	
			80 - <85		A-	3.75	5	
			75 - < 80		B+	3.5		
			70 - < 75		В	3.0		
			65 - < 70		B-	2.75		
			60 - < 65	(C+	2.5		
			50 - < 60		С	2.00		
			40 - < 50		D	1.00		
			< 40		E	0.00		
Reading list	:	1. Suter http:	⁻ , J. (2003) <u>//www.jaapsute</u>		ometri <u>geomet</u>	_	ebra Primer, <u>ora/</u>	

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		2. Doran, C, and Lasenby , A. (2007), Geometric Algebra for
		Physics, Cambridge University Press.
		3. Nur, M., & Idris, M (2023). A New Notion of Inner Product
		in A Subspace of n-Normed Spaces. Journal of the
		Indonesian Mathematical Society, 29(3), 372–381.
		https://doi.org/10.22342/jims.29.3.1412.372-381
Last revision date	:	July 28th, 2025